WHAT IS CLAIMED IS:

1. A dielectric material comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer molecule, wherein the polymer-coated single-wall carbon nanotubes are electrically-isolated from one another.

2. A dielectric material in accordance with claim 1, wherein the material has anisotropic electrical properties.

3. A dielectric material in accordance with claim 1, wherein the single-wall carbon nanotubes are smaller on average in their circumference than the average length of the individual polymer molecules.

4. A structure comprising a dielectric material in accordance with claim 1, wherein the structure is selected from the group consisting of capacitor dielectrics, circuit board materials, waveguide materials, optical index-matching materials, electromagnetic radiation absorbing materials, electromagnetic radiation re-directing materials, optoelectronic materials, antenna arrays, materials for suspending antennas, electrically-loading antennas, and supports of antenna arrays.

5. A dielectric material in accordance with claim 1, wherein the polymer-coated single-wall carbon nanotubes are embedded in a polymer matrix.

6. A dielectric material in accordance with claim 5, wherein the polymer matrix is an electrically-insulating polymer material.

7. A dielectric material in accordance with claim 5, wherein the dielectric material has anisotropic electrical properties.

8. A dielectric material in accordance with claim 1, wherein a dielectric constant of said dielectric material is at least about 10.

9. A dielectric material in accordance with claim 1, wherein a dielectric constant of said dielectric material is at least about 100.

10. A dielectric material in accordance with claim 1, wherein a dielectric constant of said dielectric material is at least about 500.

11. A dielectric material comprising a plurality of aggregates of single-wall carbon nanotubes coated at least in part with a polymer molecule wherein at least some of the plurality of aggregates of single-wall carbon nanotubes are electrically-isolated from one another.

12. A dielectric material in accordance with claim 11, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

13. A dielectric material in accordance with claim 11, wherein the single-wall carbon nanotube aggregate comprises a bundle of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

14. A dielectric material in accordance with claim 11, wherein the material has anisotropic electrical properties.

15. A dielectric material in accordance with claim 11, wherein the aggregates of single-wall carbon nanotubes are smaller on average in their circumference than the average length of the individual polymer molecules.

16. A structure comprising a dielectric material in accordance with claim 11, wherein the structure is selected from the group consisting of capacitor dielectrics, circuit board materials, waveguide materials, optical index-matching materials, electromagnetic radiation absorbing materials, electromagnetic radiation re-directing materials, optoelectronic materials, antenna arrays, materials for suspending antennas, electrically-loading antennas, and supports of antenna arrays.

17. A dielectric material in accordance with claim 11, wherein the polymer-coated aggregates of single-wall carbon nanotubes are embedded in a polymer matrix.

18. A dielectric material in accordance with claim 17, wherein the polymer matrix is an electrically-insulating polymer material.

19. A dielectric material in accordance with claim 17, wherein the material has anisotropic electrical properties.

20. A structure comprising a dielectric material in accordance with claim 17, wherein the structure is selected from the group consisting of capacitor dielectrics, circuit board materials, waveguide materials, optical index-matching materials, electromagnetic radiation absorbing materials, electromagnetic radiation re-directing materials, optoelectronic materials, antenna arrays, materials for suspending antennas, electrically-loading antennas, and supports of antenna arrays.

21. A dielectric material in accordance with claim 11, wherein a dielectric constant of said dielectric material is at least about 10.

22. A dielectric material in accordance with claim 11, wherein a dielectric constant of said dielectric material is at least about 100.

23. A dielectric material in accordance with claim 11, wherein a dielectric constant of said dielectric material is at least about 500.

24. A composition of matter comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer molecule wherein the single-wall carbon nanotubes change dimensionally and electronically in response to chemical adsorption on the surface of the nanotube.

25. A structure comprising a composition of matter in accordance with claim 24, wherein the structure is a chemical sensor.

26. A structure comprising a composition of matter in accordance with claim 24, wherein the structure is a transducer.

Doc Code: AP.PRE.REQ

27. A composition of matter comprising aggregates of single-wall carbon nanotubes coated at least in part with a polymer molecule wherein the single-wall carbon nanotubes change dimensionally and electronically in response to chemical adsorption on the surface of the nanotubes.

28. A composition of matter in accordance with claim 27, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

29. A structure comprising a composition of matter in accordance with claim 27, wherein the structure is a chemical sensor.

30. A structure comprising a composition of matter in accordance with claim 27, wherein the structure is a transducer.

10925554.082301

31. A material comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer and embedded in a polymer matrix, whereby the properties of an electromagnetic wave are capable of being modified by application of a field selected from the group consisting of an electric field and a magnetic field, wherein the material is selected from the group consisting of an electro-mechanical material and an opto-mechanical material.

32. A material comprising an aggregate of single-wall carbon nanotubes coated at least in part with a polymer and embedded in a polymer matrix, whereby the properties of an electromagnetic wave are capable of being modified by application of a field selected from the group consisting of an electric field and a magnetic field, wherein the material is selected from the group consisting of an electro-mechanical material and an opto-mechanical material.

33. A material in accordance with claim 32, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

34. A material in accordance with claim 32, wherein the single-wall carbon nanotube aggregate comprises a bundle of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

Docket No. 11321-P035US

35. A fluid comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer and dispersed in a fluid, whereby the viscosity of the fluid is capable of being controlled by application of a field selected from the group consisting of an electric field, a magnetic field and combinations thereof.

0535284 - 060304

36. A fluid comprising a plurality of aggregates of single-wall carbon nanotubes coated at least in part with a polymer and dispersed in a fluid, whereby the viscosity of the fluid is capable of being controlled by application of a field selected from the group consisting of an electric field, a magnetic field and combinations thereof.

37. A fluid accordance with claim 36, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

38. A fluid in accordance with claim 36, wherein the single-wall carbon nanotube aggregate comprises a bundle of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

10320 "46593560

39. A film comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer.

Docket No. 11321-P035US

40. A film comprising a plurality of aggregates of single-wall carbon nanotubes coated at least in part with a polymer.

41. A film in accordance with claim 40, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

42. A film in accordance with claim 41, wherein the single-wall carbon nanotube aggregate comprises a bundle of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

Doc Code: Appeal Brief

43. A fiber comprising a plurality of single-wall carbon nanotubes coated at least in part with a polymer.

Document1

44. A fiber comprising a plurality of aggregates of single-wall carbon nanotubes coated at least in part with a polymer.

45. A fiber in accordance with claim 44, wherein the single-wall carbon nanotube aggregate comprises a rope of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

46. A fiber in accordance with claim 44, wherein the single-wall carbon nanotube aggregate comprises a bundle of single-wall carbon nanotubes in which the nanotubes are substantially aligned along their longitudinal axes.

10632820 " 012901

47. An electrically-conducting composite comprising substantially aligned polymer-coated aggregates of uncoated single-wall nanotubes, wherein said electrically-conducting composite has a length of at least one thousand nanometers.

48. A method of making a conducting rod composite material comprising coating a plurality of individual single-wall carbon nanotubes at least in part with one or more polymer molecules, wherein the individual single-wall carbon nanotubes are substantially electrically isolated from one another.

Doc Code: AP.PRE.REQ

49. An electrically-conducting composite having a length of at least one thousand nanometers comprising substantially aligned polymer-coated aggregates of uncoated single-wall nanotubes.

Document1 - 11321-P035US

50. A method of making a conducting rod composite material comprising:

(a) associating a polymer with the sidewalls of a plurality of individual single-wall carbon nanotubes;

(b) solubilizing said plurality of single-wall carbon nanotubes in a solvent; and

(c) removing said single-wall carbon nanotubes from said solvent to form an aggregate in which said individual single-wall carbon nanotubes are substantially electrically isolated from one another.